Source Water Assessment Program (SWAP) Report For KURIAN LIMITED PARTNERSHIP

Prepared by the Massachusetts Department of Environmental Protection, Bureau of Resource Protection, Drinking Water Program

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Table 1: Public Water System (PWS) Information

PWS NAME	KURIAN LIMITED PARTNERSHIP
PWS Address	1300 MASSACHUSETTS AVE.
City/Town	BOXBOROUGH
PWS ID Number	2037020
Local Contact	DEBORAH BRAY
Phone Number	(978) 486-3395

Well Name	*Source ID#*	*Zone I (in feet)*	*IWPA (in feet)*	*Source Susceptibility*
Well #1	2037020-O1G	379	2000	Moderate
Well #2	2037020-O2G	385	2155	Moderate

What is SWAP?

The Source Water Assessment Program (SWAP), established under the federal Safe Drinking Water Act, requires every state to:

? inventory land uses within the recharge areas of all public water supply sources;
? assess the susceptibility of drinking water sources to contamination from these land uses; and
? publicize the results to provide support for improved protection.

Maintaining Your Good Water Quality

Susceptibility of a drinking water source does *not* imply poor water quality. Actual water quality is best reflected by the results of regular water tests.

Water suppliers protect drinking water by monitoring for more than 100 chemicals, treating water supplies, and using source protection measures to ensure that safe water is delivered to the tap.

Introduction

We are all concerned about the quality of the water we drink. Drinking water wells may be threatened by many potential contaminant sources, including septic systems, road salting, and improper disposal of hazardous materials. Citizens and local officials can work together to better protect these drinking water sources.

Purpose of this report:
This report is a planning tool to support local and state efforts to improve water supply protection. By identifying land uses within water supply protection areas that may be potential contaminant sources, the assessment helps focus protection efforts on appropriate best management practices (BMPs) and drinking water source protection measures. Department of Environmental Protection (DEP) staff are available to provide information about funding and other resources that may be available to your community.

This report includes:
1. Description of the Water System
2. Discussion of Land Uses within Protection Areas
3. Recommendations for Protection
4. Attached Map of the Protection Areas
5.

1. Description of the Water System

The two wells for Kurian Limited Partnership are located on the northeast portion of the site. The wells are six-inch wells that were drilled in bedrock, each well to a depth of 250 feet. Well #1 has a Zone I of 379 feet and an Interim Wellhead Protection Area (IWPA) of 2000 feet, and Well #2 has a Zone I of 385 feet and an Interim Wellhead Protection Area (IWPA) of 2155 feet. The wells are located in an aquifer with a high vulnerability to contamination due to the absence of hydrogeologic barriers that can prevent contaminant migration. Please refer to the attached map of the Zone Is and IWPAs. The wells serving the facility have no treatment at this time. For current information on monitoring results and treatment, please contact the Public Water System contact person listed above in Table 1.

What is a Protection Area?

A well's water supply protection area is the land around the well where protection activities should be focused. Each well has a Zone I protective radius and an Interim Wellhead Protection Area (IWPA).

- **The Zone I** is the area that should be owned or controlled by the water supplier and limited to water supply activities.

- **The IWPA** is the larger area that is likely to contribute water to the well.

In many instances the IWPA does not include the entire land area that could contribute water to the well. Therefore, the well may be susceptible to contamination from activities outside of the IWPA that are not identified in this report.

What is Susceptibility?

Susceptibility is a measure of a well's potential to become contaminated due to land uses and activities within the Zone I and Interim Wellhead Protection Area (IWPA).

2. Discussion of Land Uses in the Protection Areas

There are a number of land uses and activities within the drinking water supply protection areas that are potential sources of contamination.

Key issues include:

1. **Inappropriate activities in Zone Is;**
2. **Landscaping and Lawncare**
3. **Septic system within the IWPA; and**
4. **Transportation corridor .**

The overall ranking of susceptibility to contamination for the well is Moderate, based on the presence of only moderate and low threat land uses in the IWPA.

1. **Zone Is** - Currently, the well does not meet DEP's restrictions, which only allow water supply related activities in Zone Is. The facility's Zone Is contain parking areas and a portion of the on-site building. Please note that systems not meeting DEP Zone I requirements must get DEP approval and address Zone I issues prior to increasing water use or modifying systems.

   Recommendation:

   ✓ Remove all non-water supply activities from the Zone I to comply with DEP's Zone I requirements. Please note that water systems not meeting DEP Zone I requirements must get DEP approval and address Zone I issues prior to increasing water use or modifying their system.

   ✓ If the facility intends to continue utilizing the structures and parking in the Zone Is, use BMPs and restrict activities that could pose a threat to the water supply.

2. **Landscaping and lawncare** - Fertilizer is applied to the lawn that is located within the Zone I and IWPA. Fertilizers and pesticides, if improperly applied or stored, can be potential sources of contamination to the water supply.

   Recommendations:

   ✓ Do not use fertilizers or pesticides in the Zone I.

   ✓ Use best management practices when applying fertilizer in the IWPA.

3. **Septic systems** - The septic system is located within the IWPA of the wells. If a septic system fails or is not properly maintained it could be a potential source of microbial contamination. Improper disposal of household hazardous chemicals to septic systems is a potential source of contamination to the water supply.

Table 2: Table of Activities within the Water Supply Protection Areas

Facility Type	Potential Contaminant Sources	Zone I	IWPA	Threat	Comments
Commercial	Parking lot	Yes	Yes	Moderate	Limit road salt usage and provide drainage away from wells
	Landscaping and lawn care	Yes	Yes	Moderate	Fertilizer and pesticide use
	Septic System	No	Yes	Moderate	See septic systems brochure in the appendix
	Transportation corridor	No	Yes	Moderate	Limit road salt usage and provide drainage away from wells

*** -For more information on Contaminants of Concern associated with individual facility types and land uses please see the SWAP Draft Land Use / Associated Contaminants Matrix on DEP's website - www.state.ma.us/dep/brp/dws/.**

Glossary

Zone I: The area closest to a well; a 100 to 400 foot radius proportional to the well's pumping rate. To determine your Zone I radius, refer to the attached map.

IWPA: A 400 foot to ½ mile radius around a public water supply well proportional to its pumping rate; the area DEP recommends for protection in the absence of a defined Zone II. To determine IWPA radius, refer to the attached map.

Zone II: The primary recharge area defined by a hydrogeologic study.

Aquifer: An underground water-bearing layer of permeable material that will yield water in a usable quantity to a well.

Hydrogeologic Barrier: An underground layer of impermeable material that resists penetration by water.

Recharge Area: The surface area that contributes water to a well.

Recommendations:

- ✓ Staff should be instructed on the proper disposal of spent household chemicals. Include custodial staff, groundskeepers, and certified operator.
- ✓ Septic system components should be located, inspected, and maintained on a regular basis. Refer to the appendices for more information regarding.

4. **Transportation Corridor –** Route 111 (Massachusetts Avenue) is located within the IWPA. Major roads are potential sources of contamination due to salting of roadways and leaks or spills of fuels and other hazardous materials during accidents.
Recommendation:
   - ✓ Contact local fire department to ensure that the IWPA is included in Emergency Response Planning.

5. **Presence of a contamination site within the IWPA** The IWPA contains a DEP Tier Classified Oil and/or Hazardous Material Release Site indicated on the map as Release Tracking Number 2-0026. The referenced site is a gas station with underground storage tanks (USTs) (see #2 above). The site's responsible party is cleaning up the site and monitoring groundwater quality. See the attached map and Appendix 1 for more information.

Implementing the following recommendations will reduce the system's susceptibility to contamination.

3. Protection Recommendations

Kurian Limited Partnership should review and adopt the following recommendations at the facility:

Zone I:

- ✓ Keep non-water supply activities out of the Zone I
- ✓ Consider well relocation if Zone I threats cannot be mitigated. Please note that DEP Permit Approvals must be obtained prior to the installation of a new well.
- ✓ Do not use or store pesticides, fertilizers or road salt within Zone I.

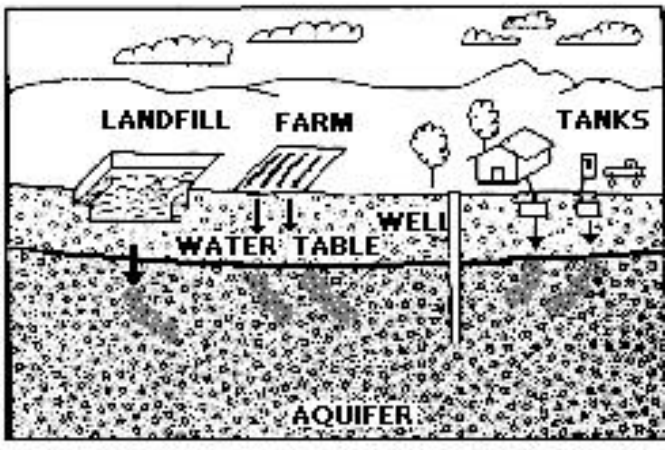

Figure 1: Example of how a well could become contaminated by different land uses and activities.

Training and Education:

- ✓ Train staff on proper hazardous material use, disposal, emergency response, and best management practices; include custodial staff, groundskeepers, and certified operator.
- ✓ Post drinking water protection area signs at key visibility locations.

Facilities Management:

- ✓ Implement standard operating procedures regarding proper storage, use and disposal of hazardous materials.
- ✓ Implement Best Management Practices (BMPs) for the use of fertilizer, herbicides and pesticides on facility property.

For More Information:

Contact Josephine Yemoh-Ndi in DEP's Worcester Office at (508) 792-7650 x 5030 for more information and for assistance in improving current protection measures.

More information relating to drinking water and source protection is available on DEP's web site at: www.state.ma.us/dep/brp/dws.

Copies of this assessment have been provided to the water department, town boards, the town library and the local media.

Planning:

- ✓ Work with local officials in Boxborough to include the facility's IWPA in Aquifer Protection District Bylaws and to assist you in improving protection.
- ✓ Have a plan to address short-term water shortages and long-term water demands. Keep the phone number of a bottled water company readily available.
- ✓ Supplement the SWAP assessment with additional local information and incorporate it into water supply educational efforts. Use a potential contaminant threat inventory to assist in setting priorities, focusing inspections, and creating educational activities.

These recommendations are only part of your ongoing local drinking water source protection. Citizens and community officials should use this SWAP report to spur discussion of local drinking water protection measures.

4. Attachments:

- Map of the Public Water Supply (PWS) Protection Area.
- Recommended Source Protection Measures Factsheet
- Your Septic System Brochure
- Pesticide Use Factsheet
- Source Protection Sign Order Form

5. Appendix

1. Table of DEP Regulated Chapter 21E Hazardous Materials Release Sites within the Water Supply Protection Areas

APPENDIX 1 – Table of Tier Classified Oil and/or Hazardous Material Sites within the Water Supply Protection Areas

DEP's datalayer depicting oil and/or hazardous material (OHM) sites is a statewide point data set that contains the approximate location of known sources of contamination that have been both reported and classified under Chapter 21E of the Massachusetts General Laws. Location types presented in the layer include the approximate center of the site, the center of the building on the property where the release occurred, the source of contamination, or the location of an on-site monitoring well. Although this assessment identifies OHM sites near the source of your drinking water, the risks to the source posed by each site may be different. The kind of contaminant and the local geology may have an effect on whether the site poses an actual or potential threat to the source.

The DEP's Chapter 21E program relies on licensed site professionals (LSPs) to oversee cleanups at most sites, while the DEP's Bureau of Waste Site Cleanup (BWSC) program retains oversight at the most serious sites. This privatized program obliges potentially responsible parties and LSPs to comply with DEP regulations (the Massachusetts Contingency Plan – MCP), which require that sites within drinking water source protection areas be cleaned up to drinking water standards.

For more information about the state's OHM site cleanup process to which these sites are subject and how this complements the drinking water protection program, please visit the BWSC web page at http://www.state.ma.us/dep/bwsc. You may obtain site -specific information two ways: by using the BWSC Searchable Sites database at http://:www.state.ma.us/dep/bwsc/sitellst.htm, or you may visit the DEP regional office and review the site file. These files contain more detailed information, including cleanup status, site history, contamination levels, maps, correspondence and investigation reports, however you must call the regional office in order to schedule an appointment to view the file.

The table below contains the list of Tier Classified oil and/or Hazardous Material Release Sites that are located within your drinking water source protection area.

Table 1: Bureau of Waste Site Cleanup Tier Classified Oil and/or Hazardous Material Release Sites (Chapter 21E Sites) - Listed by Release Tracking Number (RTN)

RTN	Release Site Address	Town	Contaminant Type
2-0026	1425 Massachusetts Ave.	Boxborough	Oil

For more location information, please see the attached map. The map lists the release sites by RTN.